

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/S19,811
Source: PCT
Date Processed by STIC: 1-12-05

ENTERED



PCT

RAW SEQUENCE LISTING

DATE: 01/12/2005

PATENT APPLICATION: US/10/519,811

TIME: 09:45:17

Input Set : A:\892370 - seq.txt

Output Set: N:\CRF4\01122005\J519811.raw

5 <110> APPLICANT: University of Guelph
 7 <120> TITLE OF INVENTION: Novel Inducible Genes From Alfalfa And Method Of Use Thereof
 9 <130> FILE REFERENCE: 08-892370WO
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/519,811
 C--> 12 <141> CURRENT FILING DATE: 2004-12-28
 14 <150> PRIOR APPLICATION NUMBER: 60/392,444
 15 <151> PRIOR FILING DATE: 2002-06-28
 17 <160> NUMBER OF SEQ ID NOS: 19
 19 <170> SOFTWARE: PatentIn version 3.1
 21 <210> SEQ ID NO: 1
 22 <211> LENGTH: 474
 23 <212> TYPE: DNA
 24 <213> ORGANISM: Medicago sativa
 26 <220> FEATURE:
 27 <223> OTHER INFORMATION: Nucleotide sequence of H7 coding region
 29 <400> SEQUENCE: 1
 30 atgggtgttt ttactttcaa tgatgaacat gtctcaaccg tggctccagc taaactctac 60
 32 aaggctcttg caaaagatgc tgatgaaatc gtcccaaagg tgatttctgc tgcccaaagt 120
 34 gttgaaattg ttgaaggaaa tggaggaccc ggaactatta agaagctatc cattgttgaa 180
 36 gatggcaaaa ccaactttgt gctacacaaa ttagattcag tggatgaggc aaactttgga 240
 38 tataactaca gcttagtgagg aggaacaggg ttggatgaaa gtttagagaa agttgaattt 300
 40 gagacaaaaa ttgttgctgg ctctgatggg ggatccattg ttaagatttc agtgaaatac 360
 42 cataccaaag gtgatgcaac tctatctgaa gcagtacgtg aggagactaa ggccaaagga 420
 44 actggactta tcaaggccat tgagggtac gtttttagcaa accctaatta ctag 474
 47 <210> SEQ ID NO: 2
 48 <211> LENGTH: 678
 49 <212> TYPE: DNA
 50 <213> ORGANISM: Medicago sativa
 52 <220> FEATURE:
 53 <223> OTHER INFORMATION: Nucleotide sequence of H11 coding region
 55 <400> SEQUENCE: 2
 56 atggcctcca cactcagtct tgtcaagctt cccattcttt caagcatcaa gacacgccaa 60
 58 tcaacctcaa aacatgttgt tccacttcca tccaaattca atattgtccc tcccacccca 120
 60 ctaaagtgtt cattagatca tcaaattaat atcaaacaaa cttctcttct atccctcaca 180
 62 gcaatcacat ttccattctt attggatacc aaagagtttg ggatatttga aggaagaaca 240
 64 tttgctctca ttcaccccat tgtgttgggt ggtttgttct tctatactct atatgctggc 300
 66 tatttggggg ggcaatggcg ccgagttagg actattcaaa atgatattaa tgagctcaag 360
 68 aaacaactca aacctgcacc ggtcgccctt gatggtaaag cacttgaaac ttcaccgcca 420
 70 tcacctgttg aacttcaaatt ccagaaactt actgaggaga ggaaagagct tatcaaaggt 480
 72 tcatcacagg ataaacactt taatgctgga tccatacttc taggatttgg tgtctttgag 540
 74 gctgttgggt tgaggactca acacatggtt aaggacagga aagctatttc caggtccaca 600
 76 tttatttgca ggagcaggca ttaccgtctt atgggcactg gcagcagctc tagtaccacc 660
 78 gatgcagaaa ggcagtga 678

(ps, 6)

RAW SEQUENCE LISTING

DATE: 01/12/2005

PATENT APPLICATION: US/10/519,811

TIME: 09:45:17

Input Set : A:\892370 - seq.txt

Output Set: N:\CRF4\01122005\J519811.raw

```

81 <210> SEQ ID NO: 3
82 <211> LENGTH: 744
83 <212> TYPE: DNA
84 <213> ORGANISM: Medicago sativa
86 <220> FEATURE:
87 <223> OTHER INFORMATION: Nucleotide sequence of H12 coding region
89 <400> SEQUENCE: 3
90 atggcaacca acgaagatca aaagcaaact gaatctggaa gacatcaaga agttgggtcac      60
92 aagagtcttt tacaaagtga tgctctttac cagtatatc tagagaccag tgtcttccca      120
94 agagaacatg aagccatgaa agagttgaga gaggtcacag caaaacaccc atggaacatc      180
96 atgacaacct ctgcagatga aggacaattt ttgagcatgc tccttaaact tatcaatgct      240
98 aagaatacca tggaaattgg tgtctacact ggctactccc tccttgccac tgccttagct      300
100 attcctgaag atggaaagat tttggctatg gacattaaca aagaaaatta cgaattgggt      360
102 ctacctgtaa ttaaaaaagc tgggtgtgat cacaaaattg atttcagaga aggtccagct      420
104 cttccagttc ttgatgaaat gatcaaagac gaaaagaatc atggttagcta cgatttcatt      480
106 tttgtggatg ctgacaaaga caattacctc aactaccata agaggttaat tgatcttggt      540
108 aaagtgggag gtgtgatcgg gtacgacaac acctatgga atggatctgt ggttgacccc      600
110 cctgatgctc cattgaggaa gtatgttagg tactatagag attttgtttt ggagcttaac      660
112 aaggctttgg ctgtggaccc taggttgaa atatgtatgc ttctgttgg tgatggaatc      720
114 actatctgcc gtaggatcaa gtaa                                744
117 <210> SEQ ID NO: 4
118 <211> LENGTH: 634
119 <212> TYPE: DNA
120 <213> ORGANISM: Medicago sativa
122 <220> FEATURE:
123 <223> OTHER INFORMATION: Nucleotide sequence of H7 regulatory region
125 <400> SEQUENCE: 4
126 acgcgtgggc gacggcccg gctggtacta aagtattact attaccaaatt ttttaggacc      60
128 ccacccatga caccattgct atatttcaat ttgggaaaat attgctataa agttactgta      120
130 gtaactttta gaagaagggt ttttttttaa ggattttaga ggaaggtag caacacacat      180
132 gcacttttaa tatacatttt ttcttataaa gtttttgat cgagttgaga aatcatatat      240
134 atactcataa atcatgtgga ttcatataa tttaatagaa cacataaatt ttaaccgaga      300
136 aataaagtgt tgcaaatata tgtaaaaga gtacgttggt aacattattt taatttcttt      360
138 tattcaatcc acactttgag tcatggactg ctatactaatt tcattttggt ttctgcaacc      420
140 taattagaga ttgtccagat acaaagagga gtaacctaat aaataaatat taaaatatc      480
142 accaacggcc tcagtaagct acttgagcta aacaatgaga tttccaaata aggtagggtcc      540
144 ttcccaagtt ctataaatag catccctcac catgtcataa accgcatcac aagttatata      600
146 ctgtattcat actatacact tatcctttca tttta                                634
149 <210> SEQ ID NO: 5
150 <211> LENGTH: 438
151 <212> TYPE: DNA
152 <213> ORGANISM: Medicago sativa
154 <220> FEATURE:
155 <223> OTHER INFORMATION: Nucleotide sequence of H11 regulatory region
157 <220> FEATURE:
158 <221> NAME/KEY: misc_feature
159 <222> LOCATION: (1)..(438)
160 <223> OTHER INFORMATION: where "n" is a or g or c or t or other
163 <400> SEQUENCE: 5

```

RAW SEQUENCE LISTING

DATE: 01/12/2005

PATENT APPLICATION: US/10/519,811

TIME: 09:45:17

Input Set : A:\892370 - seq.txt

Output Set: N:\CRF4\01122005\J519811.raw

```

W--> 164 cagaaccccg anaggctggt gctagtatgg cttcggttgta atacgactca ctataggggcg      60
166 cgcggtggtcg acgggcccggg ctgggtatcag cgagtaacga ttcatcatat ctcaactag      120
168 ggatgaatga tttattattg agtttatgaa tttgaactat tacttctaata ttctaaatga      180
170 agacatttaa gtaaaagatt aaaatatctt agtttcaaata attttggtatt ttagaattta      240
172 aattttaatct ttaaaaaaaaa attaaattta aagaagataa aaaggagaga aataaataga      300
174 tgaatataat ttgtaaacat gaagacctta tctccagtaa aaaaacatat ggaccttatc      360
176 tttttgaggt aggaaggatc tacgcgggga acctcttctt gactgtgaac cccgtatgca      420
178 gaggcagaga cagagagt
181 <210> SEQ ID NO: 6
182 <211> LENGTH: 936
183 <212> TYPE: DNA
184 <213> ORGANISM: Medicago sativa
186 <220> FEATURE:
187 <223> OTHER INFORMATION: Nucleotide sequence of H12 regulatory region
189 <400> SEQUENCE: 6
190 aaatacaaag gtgaccttat tttgcaaata atccatgcat ggaaatgcat catccttttg      60
192 aaaatgggtt tatctgaatt cttaagttag gtgaaaattt aatacatttc attttagata      120
194 aattttattat taaaattcac acttagatgg cctaaaaatt aacacttatt ttaacaatt      180
196 caaataaaat atacgacgaa atgagtgtaa tttagtgttg taagcatcgt caaagcttgg      240
198 agagaaaagat catagtttga tctttgaaaa ctatactatt gaaaagggtg aagatatcta      300
200 acctccaaca aaatttatatt gatagtcgat tcaaattatc aaaatttgga aaatatattg      360
202 taaattgtta agttgggaaa aatatgttaa ttttcaaatt accatttgca catttttcta      420
204 atctcaaatc acatttaagg gatgttgact actttcgttt tgtacaaatc tttacaattt      480
206 taacatttat aaaatgtgtt ttggtagata aaaagtgtga gtattcttta taagagattg      540
208 tgtttttctt ttgttttaac ttataaaata aatatatatt ttattttatt ttaacgtgag      600
210 attgtaagaa ttcattataa gattatgtca ttccctcaaa agaaaattag atgatgtcat      660
212 tttcataact cattttctat aaatacagaa aatcctcaaa aatgaaaaac ctcggtcaaa      720
214 aaataaaaaga aaaacatcaa tagtggactg gccacactc attgctttgc tttagtatga      780
216 gaaagtagac ctcaccaacc acgaaccgga cgccgaccgg ttcaaccaa catcacacca      840
218 attttcctaa accataccgg tttttccctc ccttatataa ccatectctc cctcttctc      900
220 taaccaagct tcattcaact cttcaacaca tatcag
223 <210> SEQ ID NO: 7
224 <211> LENGTH: 1424
225 <212> TYPE: DNA
226 <213> ORGANISM: Medicago sativa
228 <220> FEATURE:
229 <223> OTHER INFORMATION: Nucleotide sequence of genomic H7
231 <400> SEQUENCE: 7
232 acgcgtggtc gacggcccg gctggtacta aagtattact attaccaaatt ttttaggacc      60
234 ccacccatga caccattgct atatttcaat ttgggaaaat attgctataa agttactgta      120
236 gtaactttta gaagaagggt ttttttttaa ggattttaga ggaaggtag caacacacat      180
238 gcacttttaa tatacatttt ttcttataaa gtttttgat cgagttgaga aatcatatat      240
240 atactcataa atcatgtgga tttcatataa tttaatagaa cacataaatt ttaaccgaga      300
242 aataaagtgt tgcaaatata tgttaaaaga gtacgttggt aacattattt taatttcttt      360
244 tattcaatcc acattttgag tcatggactg ctatactaata tcattttggt tttcgcaacc      420
246 taattagaga ttgtccagat acaaagagga gtaacctaat aaataaatat taaaatatc      480
248 accaacggcc tcagtaagct acttgagcta aacaatgaga tttccaaata aggtagggtc      540
250 ttcccaagtt ctataaatag catccctcac catgtcataa accgcatcac aagttatata      600
252 ctgtattcat actatacact tatectttca tttacttctt gcatattgat ccttggtatc      660

```

RAW SEQUENCE LISTING

DATE: 01/12/2005

PATENT APPLICATION: US/10/519,811

TIME: 09:45:17

Input Set : A:\892370 - seq.txt

Output Set: N:\CRF4\01122005\J519811.raw

```

254 ttgatatata tatcatgggt gtttttactt tcaatgatga acatgtctca accgtggctc 720
256 cagctaaact ctacaaggct cttgcāaaag atgctgatga aatcgtccca aagggtgattt 780
258 ctgctgcccc aagtgttgaa attgttgaaag gaaatggagg acccggaact attaagaagc 840
260 tatccattgt tgaagatggc aaaaccaact ttgtgctaca caaattagat tcagtggatg 900
262 aggcāaaactt tggatataac tacagcttag tgggaggaac agggttggat gaaagttag 960
264 agaaagttga atttgagaca aaaattgttg ctggctctga tgggtggatcc attgttaaga 1020
266 tttcagtga ataccatacc aaagggtgatg caactctatc tgaagcagta cgtgaggaga 1080
268 ctaaggccaa aggaactgga cttatcaagg ccattgaggg ctacgtttta gcaaacccta 1140
270 attactagcc aattaaacc tattgaggac ttttaatttg gttgtgttgt ttcatgcgaa 1200
272 taataattaa agtttatgat gcgggttgaa tgtgttgagt atacatcaag gtctttggct 1260
274 cgtacatgtg tggtggcttt gttggatggt gtgaggtttg agtgctattt tgggtgttta 1320
276 aaaacaaaaa cctatgttgt gttgggtgata aggttttgca ccactctgtat tatgcaataa 1380
278 ataatgcaa agaattttat cgcgaaaaaa aaaaaaaaaa aaaa 1424

```

281 <210> SEQ ID NO: 8

282 <211> LENGTH: 1482

283 <212> TYPE: DNA

284 <213> ORGANISM: Medicago sativa

286 <220> FEATURE:

287 <223> OTHER INFORMATION: Nucleotide sequence of genomic H11

289 <220> FEATURE:

290 <221> NAME/KEY: misc_feature

291 <222> LOCATION: (1)..(1482)

292 <223> OTHER INFORMATION: Where n is a or g or c or t or other

295 <400> SEQUENCE: 8

```

W--> 296 cagaaccccg anaggctggg gctagtatgg cttcgttgta atacgactca ctatagggcg 60
298 cgcgtggctg acggcccggg ctggtatcag cgagtaacga ttcacatcat ctcacactag 120
300 ggatgaatga tttattattg agtttatgaa tttgaactat tacttctaatt ttctaaatga 180
302 agacatttaa gtaaaagatt aaaatatctt agtttcaaat attttggatt ttagaattta 240
304 aatttaattt ttaaaaaaaa attaaattta aagaagataa aaagggagaa aataaataga 300
306 tgaatataat ttgtaaacat gaagacctta tctccagtaa aaaaacatat ggaccttatc 360
308 tttttgaggt aggaaggatc tacgcgggga acctcttcct gactgtgaac cccgtatgca 420
310 gaggcagaga cagagagtat ggcctccaca ctcagtcttg tcaagcttcc cattctttca 480
312 agcatcaaga cagccaatc aacctcaaaa catgttggtc cacttccatc caaattcaat 540
314 attgtccctc ccacccact aaagtgttca ttagatcatc aaattaatat caaacaact 600
316 tctcttctat ccctcacagc aatcacattt ccattcttat tggataccaa ggcaagcaag 660
318 caagcaagca tcctattcta ttctattctt tcatccatat ctttactctt ttgttttcta 720
320 accaatccat gatatgaatg ttgttgaaac aggatgcact tgctgttggt ggagagtttg 780
322 ggatatttga aggaagaaca tttgctctca ttcaccccat tgtgttggtt ggtttgttct 840
324 tctatactct atatgctggc tatttggggg ggcaatggcg ccgagttagg actattcaaa 900
326 atgatattaa tgagctcaag aaacaactca aacctgcacc ggtcgcccct gatggtaaag 960
328 cacttgaaac ttcaccgcca tcacctgttg aacttcaaat ccagaaactt actgaggaga 1020
330 ggaaagagct tatcaaagg tcatcacagg ataaacactt taatgctgga tccatacttc 1080
332 taggatttgg tgtctttgag gctgttggtg tgaggactca acacatggtt aaggacagga 1140
334 aagctatttc cagggtccaca tttatttgca ggagcaggca ttaccgtctt atgggcactg 1200
336 gcagcagctc tagtaccacc gatgcagaaa ggcagtgaag cagccagaaa tcttcacatt 1260
338 gctctgaata cattgaatgt tcttctcttt gtgtggcaga ttccactgg acttgatatt 1320
340 gtatggaaag tgtttgagtt cacaaaatgg ccttgaatgt atgattctca tatgtaagta 1380
342 agttcccagg tattttactt tcaaatcagt atttggcaat atcaataaat gcaaaatttg 1440
344 ctattctgca ttttcaaaaa aaaaaaaaaa aaaaaaaaaa aa 1482

```

RAW SEQUENCE LISTING

DATE: 01/12/2005

PATENT APPLICATION: US/10/519,811

TIME: 09:45:17

Input Set : A:\892370 - seq.txt

Output Set: N:\CRF4\01122005\J519811.raw

347 <210> SEQ ID NO: 9

348 <211> LENGTH: 1906

349 <212> TYPE: DNA

350 <213> ORGANISM: Medicago sativa

352 <220> FEATURE:

353 <223> OTHER INFORMATION: Nucleotide sequence of genomic H12

355 <400> SEQUENCE: 9

```

356 aaatacaaaag gtgaccttat tttgcaaata atccatgcat ggaaatgcat catccttttg      60
358 aaaatgggtt tatctgaatt cttagttac gtgaaaattt aatacatttc attttagata      120
360 aatttattat taaaattcac acttagatgg cctaaaaatt aacacttatt tttacaatt      180
362 caaataaaat atacgacgaa atgagtgtaa tttagttggg taagcatcgt caaagcttgg      240
364 agagaaaagat catagtttga tctttgaaaa ctatactatt gaaaagggtg aagatatcta      300
366 acctccaaca aaatttattt gatagtcgat tcaaattatc aaaatttggg aaatattttg      360
368 taaattgtta agttgggaaa aatatgttaa ttttcaaatt accatttgca catttttcta      420
370 atctcaaadc acatttaagg gatgttgact actttcgttt tgtacaaatc tttacaattt      480
372 taacatttat aaaatgtgtt ttggtagata aaaagtgtga gtattcttta taagagattg      540
374 tgtttttctt ttgttttaac ttataaaata aatatatatt ttattttatt ttaacgtgag      600
376 attgtaagaa ttcattataa gattatgtca ttccctcaaa agaaaattag atgatgtcat      660
378 tttcataact cattttctat aaatacagaa aatcctcaaa aatgaaaaac ctcggtcaaa      720
380 aaataaaaaga aaaacatcaa tagtggactg gccacactc attgctttgc tttagtatga      780
382 gaaaagtagac ctcaccaacc acgaaccgga cgccgaccgg ttcaaccaa catcacacca      840
384 attttcctaa accataccgg tttttccctc ctttatataa ccatcctctc cctcttctc      900
386 taaccaagct tcattcaact cttcaacaca tatcagaaac agaaaaaaga agcaaaacat      960
388 tccaagaatt taacaatggc aaccaacgaa gatcaaaagc aaactgaatc tggaagacat     1020
390 caagaagttg gtcacaagag tcttttacia agtgatgctc tttaccagta tattctagag     1080
392 accagtgtct tccaagaga acatgaagcc atgaaagagt tgagagaggg cacagcaaaa     1140
394 caccatgga acatcatgac aacctctgca gatgaaggac aatttttgag catgctcctt     1200
396 aaacttatca atgctaagaa taccatggaa attggtgtct acactggcta ctccctcctt     1260
398 gccactgccc tagctattcc tgaagatgga aagatttttg ctatggacat taacaaagaa     1320
400 aattacgaat tgggtctacc tgtaattaaa aaagctgggt ttgatcacia aattgatttc     1380
402 agagaagggt cagctcttcc agttcttgat gaaatgatca aagacgaaaa gaatcatggt     1440
404 agctacgatt tcatttttgg ggtgctgac aaagacaatt acctcaacta ccataagagg     1500
406 ttaattgatc ttgttaaagt gggagggtgt atcgggtacg acaacacctt atggaatgga     1560
408 tctgtgggtg caccctctga tgctccattg aggaagtatg ttaggtacta tagagatttt     1620
410 gttttggagc ttaacaaggc tttggctgtg gaccctagga ttgaaatatg tatgcttctt     1680
412 gttggtgatg gaatcactat ctgccgtagg atcaagtaat tgggtttgcat gtgcactata     1740
414 tcatgtaatg cactgctcca cattattgat cattattgtg tggaagctac agagcattta     1800
416 aaagtcttca agccttcttg tcttttgtaa ttttcttca acatatttgt ggttgtaatt     1860
418 ttctcttgtc attgatattg aaacttcgaa taattgaaag ttatat      1906

```

421 <210> SEQ ID NO: 10

422 <211> LENGTH: 157

423 <212> TYPE: PRT

424 <213> ORGANISM: Medicago sativa

426 <220> FEATURE:

427 <223> OTHER INFORMATION: Amino acid sequence encoded by H7 coding region

429 <400> SEQUENCE: 10

```

431 Met Gly Val Phe Thr Phe Asn Asp Glu His Val Ser Thr Val Ala Pro
432 1          5          10          15
435 Ala Lys Leu Tyr Lys Ala Leu Ala Lys Asp Ala Asp Glu Ile Val Pro

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/519,811

DATE: 01/12/2005
TIME: 09:45:18

Input Set : A:\892370 - seq.txt
Output Set: N:\CRF4\01122005\J519811.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:5; N Pos. 12
Seq#:8; N Pos. 12
Seq#:12; N Pos. 43,44

VERIFICATION SUMMARY

DATE: 01/12/2005

PATENT APPLICATION: US/10/519,811

TIME: 09:45:18

Input Set : A:\892370 - seq.txt

Output Set: N:\CRF4\01122005\J519811.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date —

L:164 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0

L:296 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0

L:560 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0